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Ontario Hydro - Electric Inquiry  
Commission, 1922-1924

FINANCIAL  
J. ALLAN ROSS

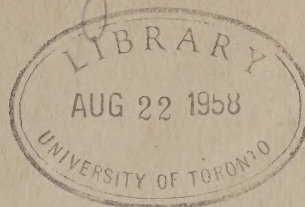
Commissioner

HYDRO-ELECTRIC INQUIRY COMMISSION

(HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO)

38

Report on investigation of accounts



REPORT ON INVESTIGATION OF ACCOUNTS  
OF  
EUGENIA SYSTEM  
DATED NOVEMBER 29, 1922

Pricewaterhouse & Co.

ROYAL BANK BUILDING

TORONTO, ONT., CANADA





# PRICE, WATERHOUSE & CO.

CANADA, UNITED STATES, MEXICO,  
GREAT BRITAIN.

ROYAL BANK BUILDING

CONTINENTAL EUROPE, ETC.  
PRICE, WATERHOUSE, PEAT & CO.  
SOUTH AMERICA  
PRICE, WATERHOUSE, FALLER & CO.  
ALSO, GREAT BRITAIN  
W. B. PEAT & CO.

TORONTO

November 29, 1922

W.D. Gregory, Esq., Chairman,  
Hydro-Electric Inquiry Commission,  
Toronto, Ontario.

Dear Sir:

## EUGENIA SYSTEM AND EUGENIA RURAL LINES

In accordance with instructions received, we have made a general investigation of the accounts and records of the Eugenia System and the Eugenia Rural Lines operated under trusteeship by the Hydro-Electric Power Commission of Ontario, and we have prepared therefrom and submit herewith the following Exhibits:

- I Operating Accounts of the Eugenia System
- 1a Analysis of Revenue from Municipalities, etc., together with Horse Power Loads and Rates
- 1b Analysis of Overhead Expenses
- II Operating Account of Eugenia Rural Lines
- III Statement showing the basis for the annual rate of Reserve for Renewals
- IV Statement of Reserve for Contingencies
- V List of Municipalities in the Eugenia System together with balance as at October 31, 1921, resulting from the adjustment, to the cost of power, of interim power bills
- VI Statement of Accounts due by Municipalities in respect of the cost of power at October 31, 1921, still unpaid at September 30, 1922
- VII Excerpts from contract with one Municipality of the System
- VIII Excerpts from contract with Township of Artesia, classified under Rural Lines
- IX Memorandum prepared by the Engineering Department of the Hydro-Electric Power Commission re Tie Line between Wasdell, Orillia and Big Chute, and between Severn and Eugenia Systems.



TORONTO

November 15, 1912

W. E. BRIDGES, JR., President,  
Canadian Pacific Railway Commission,  
Ottawa, Ontario.

Dear Sir:

TRANSIT THROUGH THE CANADIAN RAILWAY LINES

In accordance with instructions received, we have made a  
careful investigation of the accounts and records of the  
Transit through the Canadian Railway Lines operated under authority of the  
Inter-American Treaty Convention of 1907, and we have prepared  
herewith and submit herewith the following statement:

I. General Account of the Transit System

In order to better the administration, etc.,  
of the Transit System, the following is submitted:

1. Transit of Goods and Passengers

II. Transit of Goods and Passengers

III. Transit of Goods and Passengers

IV. Transit of Goods and Passengers

V. Transit of Goods and Passengers

VI. Transit of Goods and Passengers

VII. Transit of Goods and Passengers

VIII. Transit of Goods and Passengers

IX. Transit of Goods and Passengers



## SCOPE OF INVESTIGATION

Our investigation of the accounts of the Eugenia System has been confined to a general review thereof and to the consideration of such questions of accounting principle as came to our attention, any extended audit being thought unnecessary for your purposes, as Mr. C.T. Clarkson, F.C.A. has previously reported upon the accounts from the commencement, to October 31, 1921.

The various assets, liabilities and reserves of the Eugenia System and the Eugenia Rural Lines, contained in and forming a part of the general books of the Hydro-Electric Power Commission of Ontario, are reported upon herein according to the following main subdivisions:

<u>ACCOUNTS</u>	Balance as at <u>October 31, 1921</u>	
	<u>Debit</u>	<u>Credit</u>
<u>CAPITAL INVESTMENT</u>	\$2,048,663.60	
<u>OPERATING ACCOUNTS</u>		
<u>RESERVE FOR RENEWALS</u>		\$181,830.21
<u>RESERVE FOR SINKING FUND -</u>		
Eugenia System		13,156.54
Eugenia Rural Lines		144.71
<u>RESERVE FOR CONTINGENCIES</u>		12,079.58
<u>ACCOUNTS WITH MUNICIPALITIES -</u>		
Power Accounts Receivable	46,539.57	
(Interim Power Bills)		
In respect of Cost of Power -		
(Adjustment of Interim Power Bills)		
Accounts Receivable	103,477.55	
Accounts Payable		2,758.90

Before commenting upon the accounts we would first review, briefly, the history and organization of the System.

## HISTORY AND ORGANIZATION

The Eugenia System had its inception in 1914, and by December, 1915, embraced six municipalities. At the close of the





latest fiscal year the System was serving twenty-three municipalities, a list of which appears on Exhibit V, and sundry customers in the Village of Horning's Mills, while the Eugenia Rural Lines comprised two municipalities, those of Flesherton and Markdale.

The Hydro-Electric Power Commission of Ontario was authorized to develop the water power on the Beaver River by Order-in-Council of the Province of Ontario, approved by the Lieutenant-Governor, November 6, 1913 as follows:

"Upon consideration of the application of the Hydro-Electric Power Commission of Ontario in that behalf, the Committee of Council advise that pursuant to the provisions of The Power Commission Act, Chapter 19, 7 Edward VII and amendments thereto, the Commission be authorized to develop the water power known as Eugenia Falls on the Beaver River in the Township of Artemesia County of Grey and Province of Ontario, such authority to cover the following matters.

1. The purchase of the works assets real property and rights of the Georgian Bay Power Company at Eugenia Falls as above located.
2. The purchase of such additional riparian rights and privileges as may be found necessary in the opinion of the Commission for the complete ultimate development of the above mentioned site.
3. The purchase of necessary material and Equipment for construction of the plant at Eugenia Falls for the generation of electrical energy and for its transformation for transmission to the various Municipalities in the Owen Sound District.
4. The purchase of necessary material and Equipment for construction of transmission lines, and transformer stations, for delivery of the said power to the various Municipalities in the Owen Sound District, including both low and high tension transmission lines."

In accordance with this Order-in-Council, the Commission purchased on May 5, 1914, from the Georgian Bay Power Company, Limited, for a consideration of \$60,000, all the lands of that Company (with the exception of a small parcel of 3.44 acres of land, granted and conveyed as a leasehold) the franchise, and the water power in the





vicinity of Eugenia Falls on the Beaver River. This amount was paid to the National Trust Company, Limited, the mortgagee of a certain portion of the property acquired.

Concurrently the Commission purchased approximately 1525 acres of land, and in addition thereto, 175 acres of land were expropriated. On the properties so acquired the Hydro-Electric Power Commission constructed a reinforced concrete dam and an earth-filled storage dam, and flooded practically the whole area.

The Commission's further authority for the acquisition of lands, water power and works, is given by the Power Commission Act, R.S.O., 1914, Chapter 39, Section 8 (a) which is as follows:

"Acquire by purchase, lease or otherwise, or, without the consent of the owner thereof or of any person interested therein, enter upon, take possession of, expropriate and use the land, waters, water privileges, water powers, works, machinery and plant of any person owning, holding under lease or otherwise, or developing, operating or using the same for generating, or adapted for generating electrical power or energy or for the transmission thereof in Ontario; and develop and use the same for any of the purposes of this Act."

On February 10, 1916, the Commission entered into an agreement with the Pine River Light and Power Company, for the purchase of the properties briefly described below, which comprised the Orangeville-Shelburne, Horning's Mills System, the consideration therefor being \$43,570.00:

Station equipment (exclusive of buildings) in the Town of Orangeville, and the Villages of Shelburne and Horning's Mills

Lines from the power house near Horning's Mills, and Lighting System within the limits of the Village of Horning's Mills





The physical properties of the Eugenia System, proper, may, therefore, be said to consist of a development plant situated at Eugenia Falls on the Beaver River, about twelve miles south of Georgian Bay, of low tension lines and of distributing stations for the purpose of supplying electrical energy to the municipalities and to others lying within the economic limits thereof.

A power tie line connecting the Eugenia and the Severn Systems, was completed in the latter part of 1916, and since that time the Eugenia System, through this means has, with its surplus power, served the Severn System, which in turn disposes of such power to certain private and municipal corporations.

As a result of the undertakings of the Commission in respect of extensions to the Eugenia System, it may be of interest to state that the mileage of transmission lines, built and acquired by the Commission, up to October 31, 1921, aggregated 295.71 miles.

The Eugenia Rural Lines, which consist of primary transmission lines and cables, were constructed by the Hydro-Electric Power Commission of Ontario, in order to provide electrical energy to rural customers adjacent to certain municipalities in the Eugenia System.

The delivery of electrical power to rural customers of the municipalities of Markdale and Flesherton, comprising the Eugenia Rural Lines, as at October 31, 1921, began in November 1916 and February 1918, respectively. Rural Lines were at that date operated by these municipalities, which collected the revenue, and maintained the lines, paying the Commission for interest and sinking fund provision, based on the capital invested in the lines. These rural lines will become the property of the municipalities operating them, when the accumulated sinking fund payments are sufficient to repay to the





Commission the investment in the lines. The total sinking fund payments and accumulated interest to October 31, 1921 amounted to \$144.71, of which \$105.07 and \$39.64 were paid in by Markdale and Flesherton, respectively.

CAPITAL INVESTMENT \$2,048,663.60:

The investment in plant, equipment, etc. of the Eugenia System and the Rural Lines embraces the following, the balances being shown at the close of each fiscal year for the five years ending October 31, 1921, (cents omitted):

<u>As at October 31</u>					
<u>Accounts</u>	<u>1917</u>	<u>1918</u>	<u>1919</u>	<u>1920</u>	<u>1921</u>
Power Development	\$ 650,353	840,140	956,769	979,425	990,436
Wood Pole Lines	502,659	518,068	544,059	727,450	815,629
Distributing Stations	115,264	143,048	161,995	206,880	240,501
	\$1,276,276	1,501,256	1,662,823	1,913,755	2,046,566
Rural - Wood Pole Lines	-	1,576	1,695	1,695	2,095
<u>Total</u>	\$1,276,276	1,502,832	1,664,518	1,915,450	2,048,663

The expenditures in respect of the capital assets, as indicated by the detailed classification of accounts submitted to you under date of August 2, 1922, having previously been audited, have, therefore, been accepted by us as correct, without further verification.

The Rural Lines consist of primary lines owned by the Commission, but operated and maintained by the following municipalities, owning secondary or service lines tributary thereto (cents omitted):

<u>As at October 31</u>				
<u>Municipality</u>	<u>1918</u>	<u>1919</u>	<u>1920</u>	<u>1921</u>
Markdale	\$1,064	\$1,163	\$1,163	\$1,243
Flesherton	512	512	512	552
<u>Together</u>	\$1,576	\$1,695	\$1,695	\$2,095





Estimate of Additional Funds Required for  
Construction - \$479,000.00:

It has been estimated by the engineers of the Hydro-Electric Power Commission, that as at October 31, 1921 additional funds of \$160,000.00 and of \$319,000.00 respectively, will be required for the Eugenia System Lines and Stations and the Eugenia Rural Lines in order to complete, during the fiscal years ending October 31, 1922 and 1923, work now in progress and for additional works, betterments and extensions to be undertaken during those years. The estimates are for the following:

<u>Particulars</u>	<u>October 31 1922</u>	<u>October 31 1923</u>
Hydraulic Development-		
Betterments to Stations and improvement of hydraulic conditions	\$ 50,000	-
Development extension -		
Second Pipe Line surge tank and penstock to provide additional power		\$169,000
Station and Line extension and betterments -		
To cover possible extensions, station increases possibly to serve Fordwich and Seric as line switching structure at Hanover, etc.	60,000	-
Miscellaneous stations and lines -		
Small extensions the necessity for which may develop, also for providing means of converting 25 cycle power for the system	-	100,000
Rural -		
Expenditures on account of rural distribution in Townships already under application	50,000	50,000
<u>Total as per above</u>	<u>\$160,000</u>	<u>\$319,000</u>

It is recommended that a report on these estimates should be made by Mr. Walter J. Francis.





OPERATING ACCOUNT:

The Operating Account of the Eugenia System for each year of the four years ending October 31, 1921, is attached hereto, Exhibit 1, supplemented by Exhibit 1a, giving details of revenue and rates and Exhibit 1b which shows further details of expenses. The following summary has been prepared with a view to briefly stating the operating results of the four years, sub-divided according to Municipalities, to Severn System and to sundry consumers (cents omitted):

Fiscal year ending October 31

<u>Particulars</u>	<u>1918</u>	<u>1919</u>	<u>1920</u>	<u>1921</u>
<u>Municipalities:</u>				
Revenue (per Operating Account)	\$ 68,750	\$ 93,317	\$160,198	\$221,832
Profit or <del>Loss</del> on sales of power-				
To Severn System	9,299	1,691	8,782	28
To Sundry Consumers	-	-	-	1,261
<u>Net Amount</u>	<u>\$ 78,059</u>	<u>\$ 95,008</u>	<u>\$151,416</u>	<u>\$220,599</u>
 Operating Cost	 \$ 24,913	 \$ 38,363	 \$ 57,709	 \$ 61,759
Fixed Charges	53,146	59,640	93,707	130,840
<u>Total Expenses</u>	<u>\$ 78,059</u>	<u>\$ 95,008</u>	<u>\$151,416</u>	<u>\$220,599</u>
 <u>Balance</u>	 <u>Nil</u>	 <u>Nil</u>	 <u>Nil</u>	 <u>Nil</u>
 <u>Severn System:</u>				
Revenue	\$ 34,541	\$ 26,961	\$ 436	\$ 6,418
Operating Cost	\$ 7,186	\$ 8,298	\$ 2,130	\$ 1,002
Fixed Charges	18,056	18,972	7,088	5,378
<u>Total Expenses</u>	<u>\$ 25,242</u>	<u>\$ 25,270</u>	<u>\$ 9,218</u>	<u>\$ 6,390</u>
 <u>Balance transferred to Municipalities</u>	 <u>\$ 9,299</u>	 <u>\$ 1,691</u>	 <u>\$ 8,782</u>	 <u>\$ 28</u>





Fiscal year ending October 31

<u>Particulars</u>	<u>1918</u>	<u>1919</u>	<u>1920</u>	<u>1921</u>
Sundry Consumers Revenue	\$ 13,945	\$ 20,878	\$ 6,149	\$ 4,069
Operating Cost	\$ 2,500	\$ 6,537	\$ 2,341	\$ 2,838
Fixed Charges	6,735	12,586	6,900	2,492
<u>Total Expenses</u>	<u>\$ 9,235</u>	<u>\$ 19,123</u>	<u>\$ 9,241</u>	<u>\$ 5,330</u>
Balance transferred to- Contingent Reserve Municipalities	\$ 4,610	\$ 1,753	\$ 3,092	\$ -
	-	-	-	1,261
Together (per Operating Account)				
Operating Cost	\$ 34,599	\$ 50,203	\$ 62,180	\$ 85,599
Fixed Charges	77,937	89,200	107,695	146,720
	<u>\$112,536</u>	<u>\$139,403</u>	<u>\$169,875</u>	<u>\$232,319</u>
<u>Percentage of Fixed Charges to Total Expenses</u>				
For Municipalities	68.08%	62.76%	61.89%	62.94%
" Severn System	71.58%	67.16%	76.90%	84.32%
" Sundry Consumers	72.92%	68.81%	74.67%	46.75%
Combined	69.26%	63.99%	63.40%	63.15%

Power furnished in 1921, to the Walkerton Quarry at a cost of \$3,217.65 is included above with Sundry Consumers.

It will be seen from the above summary of the operating account, that the municipalities were charged with the cost of the power and the distribution thereof and with that proportion of fixed charges which pertained to the power supplied; also, that the municipalities in this system obtained over the whole period a small measure of relief by the crediting to them of the profit from the sale of power to the Severn System. The power sold to sundry consumers was charged with its proper proportion of operating expenses and fixed charges, and whatever profit or loss was realized or incurred, was, (except for the year 1921), transferred to the Reserve for Contingencies.

The operating results shown above are those stated in the published accounts of the Commission. A credit adjustment of \$1,889.40.





in 1919, of interest charges, owing to the small amount has not been reflected, either in the above summary, or in Exhibit Ia, being applicable as follows:

Prior to October 31, 1916	\$ 300.00
Year ending October 31, 1917	750.00
" " " 1918	750.00
" " " 1919	89.40
<u>Total</u>	<u>\$1,889.40</u>

With further reference to Exhibit Ia, in respect of revenue from municipalities and the rates charged for electrical power, we would state that in August 1922 an adjustment of interim rates was made, the revision being retroactive to January 1, 1922, affecting the following:

<u>Municipality</u>	<u>Original Interim Rate 1922</u>	<u>Revised Interim Rate</u>
Chatsworth	\$ 60.00	\$ 70.00
Dundalk	50.00	55.00
Flesherton	45.00	55.00
Owen Sound	30.00	40.00
Grand Valley	70.00	60.00
Hanover	40.00	35.00

The rates shown on Exhibit Ia in respect of the actual sales price per horse power of electrical power furnished the National Portland Cement Company have been reduced from the contract price of \$39.00 per horse power, referred to in further detail later, during the two years ending October 31, 1919, as explained in the following:





During Fiscal Year ending October 31, 1918 -

Power was furnished the Company for the months from May to October, both inclusive and the billing of the aggregate horse power for this period, on the basis of \$39.00 per annum, per horse power, amounted to  
whereas the horse power averaged on the annual basis for cost purposes makes the rate equivalent to \$13.99 per horse power per annum. This latter basis with reference to averaging horse power was necessary, for sake of uniformity, under the cost plan adopted.

\$13,845.22

During Fiscal Year ending October 31, 1919-

Power billed during this period, averaged 715.8 horse power for the twelve months, which at the contract price of \$39.00 per horse power, aggregated  
from which was deducted an allowance, in satisfaction of a claim, in amount of  
leaving, as stated in Exhibit Ia as revenue for the period  
equivalent to \$29.17 per horse power.

\$27,915.21

7,037.13

\$20,878.08

In respect of the contract and of the claim just referred to the following information is given:

The National Portland Cement Company of Durham, on August 3, 1917, entered into a contract with the Commission for the delivery of electrical power at the rate of \$39.00 per H.P. per annum. On August 30, 1917, an agreement was entered into between the Hydro-Electric Power Commission of Ontario, the National Portland Cement Company, and the Standard Bank of Canada, wherein the Commission consented to the sale by the Customer of certain power plant and equipment upon which the Commission had a lien, the Customer agreeing to deposit in escrow with the Standard Bank of Canada \$30,000.00 of the proceeds thereof. The bank undertook "to hold the same and current interest to answer the claims of the Commission for damages or expenses that might be incurred by it during the period of three years by reason of default by the Customer." The Cement Company claimed damages arising from interruptions etc. during the period from May 1918 to December 31, 1919, due to alleged inadequacy of the Commission's equipment. The following accounting entered into the settlement-





Charges

For Power - May 1918 to October 31, 1918	\$13,845.22	
November 1, 1918 to October 31, 1919	\$7,915.21	
November 1, 1919 to December 31, 1919	4,999.30	
For Testing -	90.00	\$46,849.73

Credits received on account:

November 30, 1918	\$ 5,000.00	
October 14, 1919	2,552.87	7,552.87

Balance due the Commission (exclusive of interest)

\$39,296.86

in respect of which an agreement was reached for the following settlement:

Amount deposited in escrow with the Standard Bank of Canada under agreement dated August 30, 1917 and turned over to the Commission in accordance with the terms of the agreement of February 6, 1920

\$30,000.00

Interest earned thereon for period from August 30, 1917 to February 6, 1920

2,259.73

Together

\$32,259.73

Balance allowed in satisfaction of Cement Company's claim for damages, charged against revenue of year ending October 31, 1919, as referred to above

7,037.13

Total, as above-

\$39,296.86

The excess cost of power, on the cost basis, amounting to \$899.51, over the revenue received, during the period from July 1916 to October 31, 1919, from sundry customers in the Village of Morning's Mills, was accumulated on the books as a charge against those customers. In the year 1921, these accumulations, with interest, were considered as uncollectible, and were charged off and included in Overhead Expenses for the year ending October 31, 1921, as shown in Exhibit Ib. Contracts for the supply of power were not entered into between the





Commission and these consumers.

It should be mentioned that the profit of \$2,236.00 since October 31, 1917, resulting from sales of electrical power to the Severn System, and the loss of \$1,261.00 from sales of power in 1921, to Sundry Consumers in Horning's Mills, as set forth in the operating account summary, have been transferred to revenue account of the municipalities in proportion to the amounts paid by them in respect of maintenance costs of the System.

For the period from October 1916, the time the Eugenia System, began supplying power to the Severn System, to October 31, 1917, a book profit of \$9,935.28 was distributed to the accounts of Municipalities and applied as stated by Mr. Clarkson, in reduction of maintenance costs. The net profit on power sold to the Severn System over the entire period of operations, aggregated \$12,171.00. From commencement of the operation of the tie line, to October 31, 1920, the Eugenia System charged the Severn System a flat rate of \$25.00 per horse power, per annum, for electrical power furnished. The price to be paid by the system receiving power by means of such connection, to the system supplying such power, and the cost of the power, etc., shall be determined by the Commission as provided for under Sections and Sub-Sections 23c, 23d and 24 (1), 24(2) and 24(3) of the Power Commission Act. During 1921 as indicated in the Operating Account Summary the Severn System was charged with power, at approximately cost, on the basis of the approved plan of cost finding, in use.

The book loss to the Eugenia System of \$3,782.00, (shown in the Operating Account Summary) resulting from the sale of power in 1920 to the Severn System, is, in general, explained as follows:





Since the latter part of 1916 the tie line, connecting the Severn System with the Eugenia System, has been in operation, as mentioned above, and from that time to October 31, 1921 the quantity of power supplied each year by Eugenia System to Severn System, as stated by the Engineering Department of the Commission, is as follows-

<u>Period</u>	<u>Average H.P. Per Month (Adjusted)</u>
<u>Year ending October 31 -</u>	
1917	1,635
1918	1,337
1919	1,047
1920 (net interchange)	17
1921 " "	46

Until 1921, in which fiscal year the Severn System paid the Eugenia System an amount sufficient to cover the costs of power as determined under the plan used therefor, power was charged for, at a flat rate of \$25.00 per horse power based on the net quantity of power supplied one System to the other.

Prior to 1921, when apportionment was made to each System on the basis of the quantity of horse power furnished consumers by the two Systems, the entire capital cost of the tie line was set against the Severn System, for cost purposes only, together with its portion of the generating plant etc. of the Eugenia System, (based on the horse power), and the entire amount of fixed charges applicable to this investment was included with other expenses in the cost of power, as apportioned on the cost of power, as apportioned on the cost plan adopted, to the Severn System. In 1920 the net horse power charged to the Severn System fell to 17 horse power and while the portion of the Eugenia Development plant applicable to the net power furnished the Severn System, changed, the full cost of the tie line was attributed to Severn, the fixed charges being based on the investment values so determined. The following data show for each year the net horse power furnished Severn System, the portion of Eugenia investment applied thereto and the fixed charges based on that investment.

<u>Capital Investment</u>				<u>Fixed Charges</u>			
<u>Fiscal Year</u>	<u>Net H.P.</u>	<u>Eugenia Development Plant etc. (Portion)</u>	<u>Tie Line etc.</u>	<u>Total</u>	<u>Interest</u>	<u>Renewal Reserve</u>	<u>Sinking Fund</u>
1917	1,635	\$307,264	\$93,317	\$400,581	\$18,789	\$7,110	-
1918	1,337	210,885	94,560	305,445	12,206	5,850	-
1919	1,047	168,404	94,137	262,541	11,359	5,713	-
1920	17	5,085	93,011	98,096	4,470	2,612	-
1921	46	10,006	50,043	60,049	2,732	1,575	\$1,051





The aggregate horse power furnished consumers of both Systems in 1921 was 10,139.3 horse power, of which 5,440.8 horse power, or 53.7% and 4,698.5 horse power, or 46.3%, respectively, were furnished by the Severn System and the Eugenia System, and on this basis the cost of the tie line in 1921 was apportioned for the purpose of determining the cost of power for the Eugenia System consumers, of which the Severn System is one.

As requested, the Chief Engineer of the Commission has furnished us with a memorandum relative to the tie lines between the Whedell, Severn and Eugenia Systems and the development at Swift Rapids, owned by the Town of Orillia, and for your information we have attached to this report a complete copy of that memorandum (Exhibit IX), which should, we believe, receive your careful consideration.

In respect of the loss of \$3,092.00 in 1920, from sale of power to sundry consumers, (in this period the National Portland Cement Company, being the only consumer), as in the case of the Severn System, the greater part of the cost is made up of charges for interest and renewals. Larger quantities of horse power were sold at a rate of \$39.00 per horse power in the earlier part of the fiscal year than later, as on January 1, 1920, the rate was increased to \$60.00 per horse power, service being discontinued August 1, 1920.

The Accountant of the Commission has prepared on an estimated basis each month, for the ten months ending August 31, 1922, operating accounts of this System, and excepting for the estimates of fixed charges and of extraordinary maintenance, included therein, the accounts are on the same basis as for the fiscal year ending October 31, 1921. The estimates appear to be on a sound basis and will, of course, be modified to meet the actual cost, upon ascertainment thereof at the time of the annual adjustment of accounts.



RESERVE FOR RENEWALS - \$181,830.21:

The balance in the Reserve for Renewals in respect of properties of the Eugenia System amounted at October 31, 1921, to \$181,830.21, a brief analysis of which follows:

<u>Period</u>	<u>Provision</u>	<u>Interest at 4%</u>	<u>Together</u>
<u>Year ending October 31-</u>			
1916	\$ 14,570.87	\$ -	\$ 14,570.87
1917	23,043.56	582.82	23,626.38
1918	26,121.05	1,527.89	27,648.94
1919	28,746.24	2,633.71	31,379.95
1920	29,972.45	3,889.03	33,861.48
1921	44,301.87	6,243.49	49,545.36
<u>Together</u>	<u>\$186,756.04</u>	<u>\$13,876.94</u>	<u>\$180,632.98</u>
<u>Add-</u>			
Additional reserve provided on second-hand equipment purchased		\$ 4,084.62	
Reserve applicable to equipment transferred from other systems		2,806.57	
		<u>\$ 6,891.19</u>	
Interest on above items		745.79	\$ 7,636.38
<u>Together</u>			<u>\$188,269.36</u>
<u>Deduct-</u>			
Cost of overhauling and rebuilding turbines		\$ 3,333.60	
Accruals on transformer shipped to Walkerton		1,182.60	
Accruals on cross-arms, braces, etc. removed		1,279.92	
Sundry charges		329.02	
		<u>\$ 6,325.14</u>	
Interest applicable to above charges		115.11	6,439.15
<u>Balance, per books, at October 31, 1921</u>			<u>\$181,830.21</u>

Additions to the Reserve for Renewals are provided through the inclusion in the cost of power, of an annual charge of 2.75% of the capital investment, exclusive of certain amounts herein later discussed, together with interest at the rate of 4% per annum on the balance in





the Reserve Account. This method of providing additions, known as the sinking fund basis, is equivalent to a so-called straight line provision of approximately 4.25% on the properties for a period of twenty-three years. That is, while the annual provisions under the two methods differ in amount, either method would accumulate the required sum in approximately twenty-three years, provided no charges were made against such accumulations.

The annual rate of 2.75% was determined by a reclassification of the properties of the System as shown by the book accounts at October 31, 1916. The reclassification of the properties, the estimated life and residual values of the various classes of property, as made by the Engineering Department of the Commission, are set forth in Exhibit III. Included in the properties of the System are items of such a substantial nature of construction that, in the opinion of the Engineers, no provisions for renewals in respect of these investments are considered necessary. These properties, which consist of a reinforced dam together with expenditures in connection with floodage and water rights, etc. represented an investment at October 31, 1916 of \$319,297.00 and this amount, or a relative one, depending upon the extent of additions in the respective years, has been eliminated from the capital investment before applying the renewal rate in the calculation of the annual provision. Any expenditures on account of repairs, or renewals of the above properties, comparatively small in amount, are currently charged into maintenance and operations.

An analysis of the Capital Investment Account of the Eugenia System, similar to that of October 31, 1916, shown in Exhibit III, has been prepared by the Engineering Department of the Commission as of more recent date and with this new analysis as a basis, we are informed, the Commission is giving consideration to the reduction of the rate and





a consequent revision of the Renewal Reserve Account, retroactive, for a period of years.

No provision has been made for renewals in respect of rural line properties since all lines on the Eugenia System are operated by the municipalities, which, under the terms of their contracts, are required to provide renewal funds, retainable by them, and against which are charged such expenditures in connection with renewals as are made by the Municipalities.

<u>RESERVE FOR SINKING FUND -</u>	<u>{ Eugenia System</u>	<u>\$13,156.84-</u>
	<u>{ Eugenia Rural Lines</u>	<u>144.71-</u>

Under Section 23 (b) of the Power Commission Act, the Hydro-Electric Power Commission is required to provide "an annual sum sufficient to form in thirty years with interest at four per cent per annum a sinking fund for the repayment of the advances made by Ontario under this Act for the payment of the cost of the works," and under the same Section, the second main paragraph, "a municipal corporation which has entered into or shall hereafter enter into a contract with the Commission for a supply of power may be relieved by the Commission from payment of any sum on account of the sinking fund account for the first five years, during which payments are made to the Commission by the corporation under such contract, and the amounts required from such corporation on sinking fund account shall be payable during the then next ensuing thirty years."

The basis for ascertaining the amount of the reserve for sinking fund each year is, for the Eugenia System, the capital cost of the power development, transformer stations, transmission lines, etc. completed and in operation. The method used by the Commission in calculating the amount of the sinking fund reserve of the Eugenia System is the same as that described in the report upon the Niagara System.



As permitted under the Act the collection of sinking fund from the twenty-three municipalities in the Eugenia System was deferred for a period of five years from the date on which they first received electrical power.

The date each municipality first received electrical power is shown on Exhibit V. Seventeen municipalities had not, at October 31, 1921, been receiving electrical service for a full period of six years, therefore the sinking fund requirement, amounting to \$21,608.57 in respect of these municipalities was deferred until such time as the six year period, in each instance, has elapsed. The amount of the sinking fund requirements for the year 1921, being the initial assessment against six municipalities and others taking power for a period of six years, is as follows:

Six Municipalities	\$11,622.58
Govern System	1,080.64
Walkerton Quarry	453.32
<hr/>	
<u>Total sinking fund provision at October 31, 1921</u>	<u>\$13,156.54</u>

The sinking fund reserve in respect of the Eugenia Rural Lines amounted to \$144.71 as at October 31, 1921, having been paid in by the Municipalities of Markdale and Flesherton.

RESERVE FOR CONTINGENCIES - \$12,079.58:

The reserve for contingencies has been established by the Commission for the purpose of providing for special losses or expenses not arising at regular intervals and not wholly applicable to the period in which incurred. In this connection the Power Commission Act provides as follows:

"The Commission may set apart out of the moneys coming to its hands from time to time from any municipal corporation, railway company, or distributing company such sums as may be sufficient in the opinion of the Commission to provide for the renewal, reconstruction, alteration and repair





of the works constructed and operated by the Commission, and to meet any unforeseen expenditure caused by the destruction or injury of any such works." (Section 14 b of the Act).

The reserve for contingencies for the Eugenia System is provided by means of -

- (a) An annual charge of twenty-five cents per horse power on average power supplied in year to municipalities comprising the System, to the Severn System and to sundry consumers
- (b) Other credits representing profits realized on sales of power to sundry consumers
- (c) Profit from sales of miscellaneous equipment, etc. and
- (d) Interest at four per centum per annum

For the purpose of showing in detail the changes which have taken place in the account since its inception in 1917, to October 31, 1921, we have attached hereto Exhibit IV. The following brief summary has been prepared from that Exhibit:

Amounts included as a part of the cost of power delivered -

To Municipalities	\$3,629.00	
To Severn System	1,040.77	
To Sundry Consumers	317.42	\$ 4,987.28

Net profit on sale of power to private companies	3,271.94
Profit on sale of miscellaneous equipment, etc.	9,794.73
Interest at 4 per centum per annum	2,411.30
<u>Together</u>	<u>\$20,465.25</u>

<u>Deduct: Expenditures and charges to cover contingencies met with (Exhibit IV)</u>	<u>8,385.67</u>
<u>Balance at October 31, 1921</u>	<u>\$12,079.58</u>





ACCOUNTS WITH MUNICIPALITIES:

Accounts with municipalities are divided by the Commission, in the main, as follows:

Power Accounts Receivable  
Due by or to Municipalities in respect of  
the Cost of Power furnished them as  
determined under the Power Commission Act

Power Accounts Receivable - \$46,539.57;

These accounts represent unpaid balances in respect of interim power bills rendered which at October 31, 1921, amounted to \$46,539.57. At September 20, 1922, the date inquired into by us, with the exception of amounts aggregating \$3,735.43, listed below, all accounts as of October 31, 1921 had been paid:

<u>Municipality</u>	<u>Amount</u>	<u>Increased Assessments</u>
Arthur	\$ 825.00	January to April, 1920
Arthur	922.33	January to April, 1921
Markdale	423.52	January to April, 1921
Orangeville	457.34	January to April, 1921
Shelburne	831.60	January to April, 1921
Tara	204.00	August, 1920, balance
Tara	71.64	January to April, 1921
<u>Total</u>	<u>\$3,735.43</u>	

These balances, upon which interest is being charged at the rate of seven per cent per annum, are said to be good and collectible.

Due by or to Municipalities in Respect  
of the Cost of Power - (Accounts Receivable - \$103,477.55-  
(Accounts Payable - 2,758.90-

At the close of each fiscal year, the interim power bills rendered monthly are adjusted to meet the operating costs of the System, determined as provided for in Sections 5c and 23 of the Power Commission Act. A list of the balances due by or to municipalities, as at October 31, 1921, is given in Exhibit V, attached hereto. Following are the amounts of the adjustments required of interim bills rendered each year, for the four years ending October 31, 1921 (cents omitted):



<u>Particulars</u>	<u>Year</u> <u>1918</u>	<u>ending</u> <u>1919</u>	<u>October</u> <u>1920</u>	<u>31</u> <u>1921</u>
Amounts due by certain Municipalities, being the excess of the cost of power over the sums charged therefor during the period	\$ 5,964	\$13,276	\$40,840	\$32,913
<u>Reduct-</u>				
Amounts due to certain Municipalities, being the excess of the sums charged for power furnished, over the cost of power during the period	15,058	4,817	-	10,774
Net amount due by or to certain municipalities, based on the adjustment of costs as provided for by the Act	\$ 9,094	\$ 8,459	\$40,840	\$22,139

As a result of the charges or credits, such as the above, as at October 31, 1921, as shown on Exhibit V, one municipality had a credit balance of \$2,758.90, representing overpayments, interest credits, etc. and twenty-two municipalities had debit balances aggregating \$103,477.55, representing under-payments, interest charges thereon, etc.

For the purpose of ascertaining the length of time the debit balances, included in the sum of \$103,477.55, were outstanding, we have prepared and have attached hereto (Exhibit VI) a statement which shows, in respect of the account due by each municipality, at October 31, 1921, and still unpaid September 20, 1922, the credits by cash or other sources applied in reduction of such balances during the period from October 31, 1921, to September 20, 1922, and if not fully paid, the period by fiscal years, over which the balance extends. With reference to the amounts credited during this interval, the following is given:

<u>Particulars</u>	<u>Number</u> <u>of</u> <u>Municipalities</u>	<u>Balance</u> <u>October 31</u> <u>1921</u>	<u>Amount Credited</u> <u>Since October 31,</u> <u>1921</u>
Accounts partially paid	6	\$29,893.40	\$ 4,446.47
Accounts with no Credits	12	62,311.97	-
<u>Total Per Exhibit VI</u>	<u>18</u>	<u>\$92,205.37</u>	<u>\$ 4,446.47</u>
Accounts fully paid	4	11,272.18	11,272.18
<u>Total</u>	<u>22</u>	<u>\$103,477.55</u>	<u>\$15,718 .65</u>





We would recommend that a careful study be made of the information presented on Exhibit VI. In explanation thereof, the charges or credits are, except for cash payments marked (c), in respect of adjustments of the interim power bills to the actual cost of power determined under the provisions of the Power Commission Act. The interest on debit or credit balances is calculated at the rate of 4% per annum. The more important features to which we would draw your attention, are -

- (1) Relatively few credits are in respect of cash payments
- (2) The majority of the accounts show charges one year after another indicating, in these instances, that interim rates do not cover the actual cost of power
- (3) As indicated by the column headed "years" at the right of the October 31, 1921, balances, numerous accounts extend back to the first year that the municipalities received electrical power

With reference to the extension of the time for payment of accounts by municipalities, the Power Commission Act provides as follows:

"The Commission may from time to time during the first three years after any municipality shall first begin to take power from the Commission extend the time for payment of the sums payable by any municipality or any part thereof, and such municipality shall pay to the Commission interest on the amount which may be in arrears or for the payment for which time is extended until the payment thereof, at such rate not exceeding seven per cent per annum as the Commission may determine." (Section 23a of the Act).

As previously mentioned, consideration is now being given by the Commission to a reduction, retroactive over a period of years, of the reserves made for renewals in respect of this system. Should such an adjustment be given effect to, the account due by or to each municipality will, of course, receive credit for its proportionate amount thereof, provided the previous practice in this respect is followed by the Commission.





GENERAL:

Contracts re Eugenia System-

While the contracts in force in connection with the operation of the Eugenia System have been examined by us in a general manner, only one for the Municipal Corporation of the Town of Arthur, stated to be of standard form, has, as an example, been examined into in detail and excerpts therefrom are set forth on Exhibit VII, attached hereto.

During the general inquiry made by us into the contracts between the Commission and electrical power consumers, it was found that a contract had been entered into between the Commission and the Police Village of Alton and that no power has, as yet, been directly furnished to this municipality. Enabling and Money By-laws covering hydro service to the Municipality of Alton were voted on by the taxpayers on January 15, 1917. Application for a supply of power was made, and on January 31, 1917, an agreement was forwarded to the authorities of Alton to be completed and was not returned fully executed until January 8, 1919.

In September 1915, an agreement was entered into by the Commission with the Alton Foundry Company for a supply of power and construction of a line was undertaken to serve this Company, the understanding being that the line would also serve the Police Village of Alton.

The Police Village of Alton was, and is at the present time, served by power from the Cataract Power Company and the existence of the lines of that Company on the streets of Alton created a condition which prevented the Commission from constructing its own system within the Village. The height of the Cataract Company poles varied to such an extent that it was impractical to either overbuild or underbuild them



and the municipality was notified by the Commission of this condition: also that it would be impossible to construct a system until these lines were removed. Although the Cataract Power Company has no franchise the municipality has, we are informed, taken no action causing vacation of the streets by that company.

A formal notice was served on the Municipality of Alton by the Commission to the effect that the Commission will be compelled to bill the municipality with the fixed charges on the investment in this line between Orangeville and Alton, inclusive of interest, sinking fund and depreciation from January 1, 1919, until the municipality begins to take power, after which these fixed charges will become part of the regular cost of service. We have been informed that a reply has not as yet been received from the Alton authorities relative to this matter.

This line, built at a cost of \$10,481.18, has been lying idle since the closing down of the Alton Foundry Company, which occurred during the latter part of the year 1918. The fixed charges since that date have been included in the charges for power to the other municipalities in the System. Should any amount be collected from the Town of Alton, as a result of the bill to be rendered in respect of fixed charges on this line, referred to in the foregoing, distribution thereof should, of course, be made to those municipalities on a proportionate basis, according to the sums with which they were originally charged.

Contracts re Eugenia Rural Lines-

Excerpts from a new agreement with the Corporation of the Township of Artemesia dated October 29, 1921, and superseding the original contract dated February 8, 1916, is given on Exhibit VIII. Prior to the date of this contract, revenue was collected by the





Municipalities which operated and maintained the lines. It will be observed, by reference to Exhibit VIII, that it is stipulated these lines be operated by the Commission.

GENERAL

We think that consideration should be given to the advisability of combining the Severn, Eugenia and Waadell's Systems into one System. These three systems are somewhat dependent upon each other for power supply, they are physically connected for exchange of power and the average power costs in the past have not been seriously disproportionate. In determining power costs to the various municipalities the costs of transmission can as readily be taken into account if the systems are combined as at present.

Should you desire further information in connection with the accounts of this System, we shall be pleased, upon request, to furnish same.

Yours very truly,

*Rice Waterbury Co.*





## HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

## TUGENIA SYSTEM - OPERATING ACCOUNT

Particulars	For the Fiscal Year ending October 31			
	1918	1919	1920	1921
<b>REVENUE:</b>				
From Municipalities	\$ 68,760.40	\$ 93,317.12	\$160,198.34	\$221,832.56
From Private Companies and from Severn System	48,386.67	47,839.33	6,585.33	10,486.96
<b>Total Revenue</b>	<b>\$117,147.07</b>	<b>\$141,156.45</b>	<b>\$166,783.67</b>	<b>\$232,319.51</b>
<b>COST OF OPERATING INCLUDING PORTION OF ADMINISTRATIVE EXPENSES:</b>				
Power Purchased (temporary period of breakdown)	-	\$ 274.50	-	-
Power Development and Transformer Stations -				
Operation -				
Labor	\$ 4,727.97	8,010.74	\$ 9,971.53	\$ 11,993.26
Material and Expense	1,180.64	2,693.30	3,177.97	4,830.63
Maintenance -				
Land, Buildings and Structures	2,160.28	1,459.60	1,638.72	6,410.36
Electric Equipment	1,427.77	1,554.98	1,425.98	5,223.09
Switchboards and Meters	3,186.37	1,556.52	1,323.56	1,345.70
Miscellaneous Equipment	2,441.90	2,866.07	2,520.41	2,220.09
Taxes, Insurance and General Expense	786.44	2,065.45	1,904.18	2,669.19
Transmission Lines - Maintenance -				
Patrolling	4,978.26	4,520.28	5,190.37	9,823.91
Pole Lines	1,228.88	1,704.86	2,174.86	1,079.87
Conductors and Cables	981.32	939.82	1,111.54	798.26
Miscellaneous Expense	-	531.78	423.85	52.93
Overhead Expenses (per attached Statement)	11,499.34	22,026.35	33,316.80	39,132.25
<b>Total Expenses</b>	<b>\$ 34,999.24</b>	<b>\$ 50,203.35</b>	<b>\$ 62,179.71</b>	<b>\$ 88,590.54</b>
<b>Balance before deducting Fixed Charges</b>	<b>\$ 82,147.83</b>	<b>\$ 90,953.20</b>	<b>\$104,603.96</b>	<b>\$146,719.97</b>
<b>Deduct Fixed Charges -</b>				
Interest on Capital Investment	\$ 53,793.32	\$ 59,366.32	\$ 76,884.61	\$ 88,086.94
Provision for Renewals	36,121.05	25,746.24	29,972.45	44,301.87
Provision for Sinking Fund	-	-	-	13,156.54
Provision for Contingencies	1,022.85	1,087.56	838.75	1,174.62
<b>Total Fixed Charges</b>	<b>\$ 77,937.12</b>	<b>\$ 89,200.12</b>	<b>\$107,695.81</b>	<b>\$146,719.97</b>
<b>Net Profit or Loss -</b>				
(Representing profit or loss from sale of power to private companies)	\$ 4,610.71	\$ 1,753.08	\$ 3,091.85	-
<b>Deduct - Net Profit or Loss from sale of power to private companies, transferred to Reserve for Contingencies</b>	<b>4,610.71</b>	<b>1,753.08</b>	<b>3,091.85</b>	<b>-</b>
<b>Balance</b>	<b>\$41</b>	<b>\$41</b>	<b>\$41</b>	<b>\$41</b>



## HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

## EUGENIA SYSTEM

ANALYSIS OF REVENUE FROM MUNICIPALITIES AND OTHER  
CONSUMERS, TOGETHER WITH HORSE POWER LOANS AND RATES

Particulars	Year ending October 31, 1918				Year ending October 31, 1919				Interim Rates	
	Revenue	Average Horse Power	Actual Cost per H.P. (adjusted)	Interim Rates	Revenue	Average Horse Power	Actual Cost per H.P. (adjusted)		To April 30, 1919	To October 31, 1919
<b>MUNICIPALITIES:</b>										
Alton Foundry Company	\$ 3,336.10	90.9	\$ 36.70	\$ 43.23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(a) Arthur	5,388.19	103.0	52.62	48.00	9,019.33	151.9	59.38	45.00	45.00	45.00
Chatsworth	980.64	31.1	31.53	30.18	1,114.32	39.4	37.30	30.18	30.18	30.00
Chesley	4,445.44	95.5	46.56	40.00	6,387.68	159.8	39.97	40.00	40.00	40.00
Dundalk	1,930.81	83.0	23.26	27.30	2,824.80	93.9	36.08	27.30	27.30	27.00
Durham	1,868.54	69.8	26.77	33.97	2,430.03	74.3	32.71	33.97	33.97	33.00
Elmwood (April 1918)	1,151.02	27.5	(c) 41.85	35.00	1,967.21	45.8	42.84	35.00	35.00	35.00
Fleasherton	1,015.81	33.5	30.44	28.96	1,660.41	58.1	28.92	28.96	28.96	28.00
(a) Grand Valley	2,129.64	51.5	41.35	45.00	2,946.12	57.5	51.25	45.00	45.00	45.00
Manover	7,564.66	273.3	26.46	35.00	12,451.04	416.4	29.90	35.00	35.00	35.00
Holstein	912.56	6.4	142.59	43.50	1,661.85	23.0	72.25	43.50	43.50	44.00
Horning's Mills	686.21	-	-	K.W.H.plus 12.00	925.25	5.3	-	K.W.H.plus 12.00	-	-
Markdale	1,588.31	67.0	20.73	23.24	1,871.14	74.0	25.28	23.24	23.24	23.00
Mount Forest	5,245.99	119.1	44.05	34.51	6,669.48	129.3	51.56	34.51	34.51	40.00
Neustadt	906.29	8.5	-	K.W.H.plus 12.00	1,593.62	13.5	35.14	42.50	42.50	42.50
(a) Orangeville	3,828.88	127.0	30.15	35.00	6,749.02	134.3	50.25	35.00	35.00	35.00
Owen Sound	20,187.35	1007.6	20.03	31.00	24,878.68	934.9	26.61	31.00	31.00	28.00
Shelburne	3,457.06	123.7	27.94	30.00	4,825.06	144.8	33.32	30.00	30.00	30.00
Tara (February 1918)	2,539.10	24.9	(c) 101.97	37.00	3,320.90	36.2	91.95	37.00	37.00	37.00
<b>Total</b>	<b>\$ 63,760.40</b>	<b>2347.1</b>			<b>\$23,317.12</b>	<b>2567.4</b>				
<b>OTHER CUSTOMERS:</b>										
			Sales Price				Sales Price			
National Portland Cement Company (May 1918)	\$ 13,545.22	407.3	\$ 33.99	\$ 39.00	\$20,578.08	715.8	\$ 29.17	\$ 39.00	\$ 39.00	\$ 39.00
Seyern System	34,541.45	1337.0	(b) 25.83	25.00	26,961.25	1047.0	(b) 25.75	25.00	25.00	25.00
<b>TOGETHER as per Operating Account (Exhibit I)</b>	<b>\$117,147.07</b>	<b>4091.4</b>			<b>\$141,156.45</b>	<b>4350.2</b>				

## NOTE:

- (a) Exclusive of interest charges in the amount of \$839.40 for the years 1918 and 1919 on final payment made to Pine River Light & Power Company, Limited, for purchase of Orangeville, Shelburne, Horning's Mills System, and charged as a separate item to these municipalities in the year 1919.
- (b) Average horse power billed, reduced by line loss thereby increasing the flat rate of \$25.00 used in interim power bills.
- (c) Electrical power delivered to these municipalities during part of the year only, has been put on an annual basis.





Particulars	Year ending October 31, 1920				Year ending October 31, 1921					
	Revenue	Average Horse Power	Actual Cost per H.P. (adjusted)	Interim Rates		Revenue	Average Horse Power	Actual Cost per H.P. (adjusted)	Interim Rates	
				To January 1 1920	To October 31 1920				To December 31 1920	To October 31 1921
MUNICIPALITIES:										
Arthur	\$ 11,142.49	129.0	\$ 86.37	\$ 45.00	\$ 65.00	\$ 10,419.99	134.2	\$ 77.64	\$ 65.00	\$ 65.00
Chatsworth	1,624.22	26.0	56.01	30.00	45.00	1,747.48	28.5	61.31	45.00	60.00
Chesley	12,518.32	250.3	50.01	40.00	45.00	11,399.30	241.6	47.18	45.00	55.00
Dundalk	4,180.61	87.7	47.47	27.00	38.00	4,562.93	97.7	46.70	38.00	50.00
Durham	4,705.82	100.6	46.78	33.00	45.00	5,451.57	220.2	43.10	45.00	50.00
Elmwood	2,775.88	51.0	54.42	35.00	45.00	2,678.29	54.3	49.32	45.00	55.00
Flesherton	2,519.82	57.3	43.97	35.00	36.00	2,760.49	47.1	58.61	36.00	45.00
Grand Valley	4,628.83	80.7	76.26	45.00	65.00	3,305.98	62.9	60.51	60.00	70.00
Manover	23,097.22	593.1	43.32	35.00	35.00	38,301.23	1040.7	34.88	35.00	40.00
Meistein	1,455.38	9.3	156.49	44.00	75.00	1,758.06	9.5	185.06	75.00	90.00
Morning's Mills	1,594.12	5.0	-	K.W.H. plus 12.00	-	-	-	-	-	-
Kincardine (March 1921)	-	-	-	-	-	6,637.19	58.0	(c) 114.43	-	48.00
Lacknow (January 1921)	-	-	-	-	-	3,932.19	39.3	(c) 100.05	-	60.00
Markdale	3,158.79	85.7	36.86	23.00	35.00	3,066.93	85.2	36.00	35.00	50.00
Mount Forest	10,133.20	151.6	66.84	40.00	55.00	12,695.40	185.6	68.40	55.00	65.00
Neustadt	5,007.69	84.2	59.47	42.50	45.00	6,573.67	126.3	51.65	45.00	55.00
Orangeville	9,454.18	138.2	69.41	35.00	55.00	9,019.31	142.1	63.47	55.00	65.00
Owen Sound	45,843.67	1132.2	40.49	28.00	28.00	55,932.04	1391.2	40.20	28.00	30.00
Priceville (March 1921)	-	-	-	-	-	474.41	4.1	(c) 115.71	-	47.00
Ripley (January 1921)	-	-	-	-	-	4,030.95	38.7	(c) 104.16	-	60.00
Shelburne	8,974.97	183.6	48.88	30.00	38.00	7,894.30	175.4	44.25	38.00	50.00
Tara	4,783.43	44.6	107.25	37.00	85.00	4,131.80	41.2	100.28	85.00	90.00
Tecumseh (December 1920)	-	-	-	-	-	4,195.46	60.4	(c) 69.46	40.00	40.00
Wingham (December 1920)	-	-	-	-	-	18,373.58	224.4	(c) 64.60	45.00	45.00
	\$160,198.24	3191.1				\$221,832.55	4871.6			
OTHER CONSUMERS:										
Morning's Mills	\$ -	-	<del>Sales Price</del>	-	-	\$ 851.05	5.0	-	K.W.H. plus 12.00	-
National Portland Cement Company	6,149.30	146.6	41.94	30.00	60.00	-	-	-	-	35.00
Walkerton Quarry	-	-	-	-	-	3,217.65	76.1	42.28	-	-
Sewer System	436.03	17.4 (b)	25.06	25.00	25.00	6,418.26	45.8	-	25.00	25.00
TOGETHER as per Operating Account (Exhibit I)										
	\$166,783.67	3355.1				\$232,319.51	4698.5			

NOTES:

- (b) Average horse power billed, reduced by line loss thereby increasing the flat rate of \$25.00 used in interim power bills.
- (c) Electrical power delivered to these municipalities during part of the year only, has been put on an annual basis.





## HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

## EUGENIA SYSTEM

STATEMENT OF HORSE POWER LOADS AND RATES FOR  
THE TEN MONTHS ENDING AUGUST 31, 1922.

Particulars	Average Horse Power (Annual Basis)	Rates per Horse Power January 1 to August 31		
		Oct. 31, 1921 to Jan. 1, 1922	Original	Adjusted Retroactive to January 1
Arthur	118.5	\$ 85.00	\$ 85.00	
Chatsworth	33.0	60.00	*60.00	\$ 70.00
Chester	263.7	55.00	55.00	
Dundalk	88.4	50.00	*50.00	55.00
Durham	315.4	50.00	50.00	
Elmwood	37.8	55.00	55.00	
Flesherton	47.2	45.00	*45.00	55.00
Grand Valley	62.0	70.00	*70.00	60.00
Hanover	1210.5	40.00	*40.00	35.00
Holstein	11.1	90.00	90.00	
Kincardine	143.0	48.00	48.00	
Lucknow	7.7	60.00	60.00	
Markdale	88.4	50.00	50.00	
Mount Forest	180.6	65.00	65.00	
Neustadt	205.9	55.00	55.00	
Orangeville	184.3	65.00	65.00	
Owen Sound	1421.3	30.00	*20.00	40.00
Priceville	8.8	47.00	47.00	
Ripley	64.5	60.00	60.00	
Shelburne	144.3	50.00	50.00	
Tara	45.8	90.00	90.00	
Teeswater	113.5	40.00	40.00	
Wingham	259.1	45.00	45.00	
Hanover Cement and Stone Company, Limited	118.5	-	45.00	

## \*NOTE:

The original rates, in cases of adjustment of rates, were used in Interim Power Bills from January 1 to June 30, 1922.



BURUNDIA SYSTEM - OVERHEAD EXPENSES  
(Subsidiary to Operating Statement)

Particulars	Fiscal Year Ending October 31			
	1918	1919	1920	1921
Head Office Salaries	\$ 2,314.42	\$ 2,277.19	\$ 5,943.85	\$ 5,512.71
Field Office Salaries	-	-	4,356.78	1,671.14
Executive Expenses	344.83	2,104.93	843.44	1,388.72
Field Office Expenses	-	-	-	774.90
All Stations and Lines Undistributed Expense	3,185.34	1,285.52	274.58	2,796.15
Undistributed Truck and Car Expense	-	5,557.21	9,231.41	4,105.99
Camp Operation	-	-	632.97	467.58
Automobile Expense	-	-	1,660.32	-
Municipal Auditing	497.66	386.65	1,123.65	2,084.56
Municipal Engineering	-	696.35	1,997.87	2,050.01
Estimating	83.26	262.78	499.96	488.69
Hydraulic Engineering	808.42	222.13	220.80	1,609.85
Electrical Engineering	-	-	446.16	160.23
Municipal Administration	2,068.21	3,502.63	3,583.11	5,036.92
Extraordinary Maintenance	-	1,018.47	427.93	6,920.01
Depreciation on Tools	-	-	-	341.62
Handling Maintenance Stores	-	-	-	623.93
Garage Operation	-	-	-	367.60
Laboratory Operation	-	-	-	616.13
Miscellaneous General Expense	2,042.74	488.84	1,572.54	1,020.83
Stamps, Stationery, etc.	224.46	1,222.65	512.06	225.17
Horning Mills Account	-	-	-	899.51
	\$11,499.34	\$22,026.38	\$33,316.80	\$30,132.28





HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

PROSPECTA SYSTEM RURAL LINES

OPERATING ACCOUNT

Particulars	Year ending October 31			
	1918	1919	1920	1921
<u>REVENUE:</u>				
Interest and Sinking Fund collectible from Municipal- ities which operate lines	\$116.64	\$124.64	\$124.64	\$142.90
<u>Deduct-</u>				
Interest on Capital Invest- ment	\$ 87.89	\$ 94.12	\$ 94.12	\$108.34
Provision for Sinking Fund	29.05	30.52	30.52	34.65
<u>Together</u>	\$116.94	\$124.64	\$124.64	\$142.99
<u>Balance</u>	N11	N11	N11	N11

NOTE:  
Rural Lines operated by the municipalities of Flesherton and  
Markdale, which supply the power and pay operating expenses.





## NUGUELA SYSTEM

STATEMENT SHOWING BASIS OF ANNUAL RATE OF 2.75% FOR INTEREST FOR DEBENTURES

Particulars	Capital Investment (October 31, 1916)		Estimated Residual Values		Reserve to be Provided Annual Provision (Sinking Fund Basis)		
	Total Amount	Estimated Life (in years)	% of Investment	Amount	Total Amount	Amount	% of Investment
<b>POWER PLANT:</b>							
Clearing	\$ 4,104.	-	100	\$ 4,104.	\$ -	\$ -	-
Surge Tank (steel)	5,333.	50	10	352.	5,023.	32.91	-
Surge Tank (excavation)	4,930.	-	100	4,930.	-	-	-
Wood Flume (Pipe)	16,146.	30	33	454.	17,092.	564.13	-
Wood Flume (excavation)	30,339.	-	100	30,339.	-	-	-
Pennstock (steel)	34,363.	40	10	3,436.	32,664.	343.74	-
Pennstock (excavation)	4,574.	-	100	4,574.	-	-	-
Gate House	10,756.	50	-	-	10,756.	176.41	-
Valves	8,444.	15	10	800.	7,972.	306.43	-
Turbines	33,360.	17	5	1,510.	30,466.	1,074.34	-
Power-house Substructure	21,450.	40	-	-	21,450.	325.73	-
Tail Race	16,557.	-	100	16,557.	-	-	-
Canal	31,746.	-	100	31,746.	-	-	-
Other Dams, etc.	23,716.	100	-	-	23,716.	10.67	-
Together	250,250.	-	-	\$103,117.	\$185,141.	\$2,617.66	1.0095
<b>POWER HOUSE SUBSTRUCTURE, DAMS, and TAIL RACE, etc.:</b>							
Site A	\$ 80.	-	100	\$ 80.	\$ -	\$ -	-
Building B	10,993.	50	7	770.	10,223.	26.96	-
Electrical C.S.I.	37,922.	15	26	7,544.	30,274.	1,511.92	-
Electrical S.S.S.	3,322.	30	10	315.	2,932.	96.10	-
Cottages	8,650.	30	10	865.	6,453.	186.12	-
Together	\$ 59,967.	-	-	\$ 9,276.	\$ 47,722.	\$1,827.10	1.109
Total Power Plant	\$14,319.	-	-	\$113,393.	\$80,925.	\$4,574.76	1.467
<b>TRAIL TO POWER PLANT:</b>							
Right-of-Way	\$ 9,143.	-	100	\$ 9,143.	\$ -	\$ -	-
Pole Line	220,004.	12	-	-	220,004.	14,314.87	-
Cable	100,750.	50	60	100,675.	73,170.	478.95	-
Together	\$414,548.	-	-	\$110,808.	\$296,726.	\$15,993.82	3.689
<b>STATIONS:</b>							
Buildings	\$ 13,276.	30	4	\$ 531.	\$ 12,745.	\$ 227.34	-
Electrical Equipment	1,000.	16	30	7,703.	30,935.	1,417.44	-
Together	\$ 51,944.	-	-	\$ 8,234.	\$ 43,680.	\$ 1,644.68	3.156
<b>Totals</b>	\$780,811.	-	-	\$339,492.	\$541,319.	\$21,615.26	2.768

## RECONCILIATION WITH BOOK FIGURES

Total amount of Capital Investment per books	\$1,137,680.00
Less -	
Non-operating Capital (work under construction)	\$ 37,572.00
Non-convertible properties (Amhurst Dam, floodgate rights, etc.)	319,297.00
Balance as above	\$ 780,811.00



HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO  
EUGENIA SYSTEM

STATEMENT OF RESERVE FOR CONTINGENCIES

Particulars	Fiscal Year ending October 31					Together
	1917	1918	1919	1920	1921	
Balance at the beginning of year	\$ -	\$10,645.50	\$16,717.61	\$19,488.48	\$13,430.94	\$ -
Amounts charged as a part of the cost of power delivered -						
To Municipalities	454.80	586.78	646.86	797.75	1,142.90	3,629.09
To Severn System	408.70	334.25	261.75	4.35	31.72	1,040.77
To Private Companies	-	101.83	176.95	35.65	-	317.42
Profit or Loss for the year on power sold to private companies	-	4,610.71	1,753.08	3,091.65	-	3,271.94
Profit on sale of miscellaneous equipment, etc.	9,782.00	12.73	-	-	-	9,794.73
Interest at 4% per annum	-	425.82	668.70	779.54	537.24	2,411.30
	\$10,645.50	\$16,717.61	\$20,226.95	\$18,014.92	\$15,142.80	20,468.25
Deduct-						
Uncollectible balance of Alton Foundry Company (Private Company)	\$ -	\$ -	\$ 373.74	\$ -	\$ -	\$ 373.74
Expenditures during the year -						
Repairing and replacing equipment on lines which had been damaged by storm	-	-	-	3,711.47	-	3,711.47
Costs incidental to the transfer of equipment	-	-	-	872.51	-	872.51
Dismantling National Cement Company Distributing Station, also crating and removal of equipment	-	-	-	-	3,939.37	3,939.37
Difference between purchase and transfer price of transformers shipped from Orangeville to Walkerton	-	-	-	-	982.50	982.50
Miscellaneous	-	-	364.75	-	105.35	471.08
Total charges	\$ -	\$ -	\$ 738.47	\$ 4,583.98	\$ 3,033.22	\$ 4,385.67
Balance at close of each fiscal year ending October 31	\$10,645.50	\$16,717.61	\$19,488.48	\$13,430.94	\$12,079.58	\$12,079.58





LIST OF MUNICIPALITIES IN THE EUGENIA SYSTEM,  
TOGETHER WITH BALANCES AS AT OCTOBER 31, 1921,  
RESULTING FROM THE ADJUSTMENT TO THE COST OF  
POWER, OF INTERIM POWER BILLS

Municipality	Date Commenced Operating	Balance at October 31, 1921	
		Debit	Credit
Arthur	Dec. 1916	\$9,515.86	\$2,758.90
Chatsworth	Dec. 1915	1,831.64	
Chesley	July 1916	6,654.73	
Dundalk	Dec. 1915	3,998.57	
Durham	Dec. 1915	1,502.80	
Elmwood	Apr. 1918	915.27	
Flesherton	Dec. 1915	2,943.43	
Grand Valley	Dec. 1916	2,063.88	
Hanover	Sept. 1916		
Holstein	May 1916	4,640.44	
Kincardine	Mar. 1921	3,855.59	
Lucknow	Jan. 1921	1,577.19	
Markdale	Mar. 1916	627.69	
Mount Forest	Dec. 1915	17,615.48	
Neustadt	Dec. 1918	2,098.61	
Orangeville	July 1916	8,649.64	
Owen Sound	Dec. 1915	16,210.28	
Priceville	Mar. 1921	280.55	
Ripley	Jan. 1921	1,814.45	
Shelburne	July 1916	3,313.73	
Tara	Feb. 1918	6,063.87	
Teeswater	Dec. 1920	1,617.13	
Wingham	Dec. 1920	5,576.72	
Sundry Customers Morning's Bills	July 1916	-	
Totals		\$163,477.55	\$2,758.90





## HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

## EUGENIA SYSTEM

STATEMENT OF ACCOUNTS DUE BY MUNICIPALITIES IN RESPECT OF THE COST OF POWER, AT OCTOBER 31, 1921.  
STILL UNPAID AT SEPTEMBER 30, 1922

Year ending October 31

Municipality	1916 Charges or Credit	1917 Charge or Credit	Interest	1918 Charge or Credit	Interest	1919 Charge or Credit	Interest	1920 Charge or Credit	Interest	1921 Charge or Credit	Interest	Balance at October 31 1921	Years	Payments or Acct. Subse- quent to Oct. 31, 1921
Arthur	5 -	3,085.24	-	1,053.95	81.46	2,217.23 341.59	126.87	3,514.13	242.30	384.55	384.55	9,515.86	5	-
Chatsworth	533.57	108.61	25.31	43.32	30.66	229.55	38.62	431.47	44.15	189.11	65.17	1,831.64	6	752.28
Chealey	1,963.26	2,638.48	75.45	627.42	187.16	260.01	219.75	1,886.68	238.94	311.96	6,654.73	6	-	
Dundalk	1,983.28	256.90	79.32	384.95	92.54	359.96	64.84	1,088.15	104.72	152.43	3,906.57	-	2,000.00	
Durham	2,111.37	411.57	84.46	354.17	104.32	410.55	64.32	471.74	89.53	121.66	1,568.86	6	-	
Elmwood	-	-	-	-	-	410.55	4.30	633.25	16.68	42.60	915.27	3	-	
Flesherton	674.99	356.12	25.00	148.93	40.25	171.46	47.81	656.84	56.58	730.33	85.12	2,943.43	6	302.94
Holstein	406.07	820.44	18.20	634.16	49.67	656.32	77.02	804.47	106.36	927.94	142.79	4,640.44	6	-
Kincaidine	-	-	-	-	-	-	-	-	-	3,855.59	-	3,855.59	1	-
Lucknow	-	-	-	-	-	-	-	-	-	1,577.19	-	1,577.19	1	-
Markdale	900.06	310.46	35.99	281.11	49.85	223.18	47.01	-	57.78	68.28	627.69	6	-	
Mount Forest	5,188.50	3,521.44	206.65	1,362.21	356.66	2,223.97	428.42	2,171.60	531.39	988.13	639.51	17,615.48	6	988.13
Neustadt	-	-	-	-	-	832.53	-	1,455.02	33.30	92.86	2,098.61	3	-	
Orangeville	1,492.72	751.30	59.70	92.15	2,236.35 1,142.79	77.03	2,683.77	215.36	35.10	331.33	8,649.64	6	-	
Owen Sound	5,391.93	6,355.68	335.68	11,048.66	75.28	3,728.89	363.66	14,141.33	457.19	14,676.65	58.98	16,210.28	6	-
Priestville	-	-	-	-	-	-	-	-	-	280.55	-	280.55	1	252.44
Shelburne	1,156.22	624.50	46.24	47.69	75.68	639.06 31,107.85	-	2,416.07	-	576.55	150.68	3,313.75	5	150.68
Tara	-	-	-	1,648.28	-	2,048.10	64.74	1,468.40	151.33	444.80	216.12	6,063.97	4	-
			399.04	12,233.89	12,233.89	51				Totals	692,265.37			84,446.47

NOTE: C denotes cash payments on account.

\* represents accrued interest on final payment to Pine River Light and Power Company chargeable to these municipalities for purchase of Orangeville-Shelburne-Morning's Mills System acquired by the Commission under agreement dated February 10, 1916.



SPECIMEN OF AGREEMENT RE EUGENIA LINES

OPERATED BY THE COMMISSION

Excerpts from Agreement dated June 2, 1916, entered into by the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Town of Arthur.

The Commission agrees with the Corporation to reserve and deliver at the earliest possible date, one hundred and fifty horse power (150 H.P.) or more of electrical power to the Corporation, and at the expiration of a reasonable notice in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation, additional electric power when called for.

In consideration of the foregoing covenants, the Corporation agrees with the Commission:

To pay annually, interest at rate payable by the Commission upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken) of all monies expended by the Commission on capital account for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other works necessary for the delivery of electrical energy or power to the Corporation under the terms of this contract.

Also to pay an annual sinking fund instalment of such amount as to form at the end of 30 years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based as aforesaid, of all monies advanced by the Province of Ontario for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other work necessary for the delivery of said electrical energy or power. Also to pay the Corporation's proportionate part, based as aforesaid, of the cost of lost power, and the cost of generating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations and other necessary works.

The amounts payable under this contract shall be paid in twelve monthly payments, and bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. All payments in arrears shall bear interest at the legal rate.

To take electric power exclusively during the continuance of this agreement from the Commission.





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To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes the same or not. When the highest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or highest average, for a period of twenty consecutive minutes, the taking of such excess shall there-after constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power in accordance with the terms and conditions of this contract.

When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90% the Corporation shall pay for 90% of said power divided by the power factor.

This agreement shall remain in force for thirty years from date of the first delivery of power under this contract.

The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations for such power and such interest, sinking fund, cost of lost power and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

If at any time any other Municipal Corporation, or pursuant to said Act, any railway or distributing Company, or any other Corporations or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the involved Corporation or Corporations in writing, of a time and place and hear all representations that may be made as to the terms and conditions for such supply.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation or Corporations supplied by the Commission but the Commission shall be entitled to a lien upon said property for all monies expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any) supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor-in-Council.





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If differences arise between Corporations to which Commission is supplying power, the Commission may upon application fix a time and place and hear all representations that may be made by the parties and the Commission shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under the Act respecting Enquiries concerning Public Matters.



EUGENIA SYSTEM RURAL LINES

Excerpts from Agreement dated October 29, 1921, entered into by the Hydro-Electric Power Commission of Ontario and the Corporation of the Township of Artemesia.

The Commission agrees with the Corporation to supply and construct all lines on the highway and to supply and erect at such points as may be approved by the Commission, such transformers, lightning arresters, fuse boxes, meters or other apparatus, made necessary by contracts for electric service, between the Corporation and residents or users within the township; to operate, maintain, renew and insure the said lines, transformers, etc., and to collect from the customers all monies due on account of electrical service rendered under this Agreement, at rates approved by the Commission, and to make an accounting of same, a report of which shall be rendered to the Corporation annually.

In consideration of the foregoing covenants, the Corporation agrees with the Commission:

To grant the free right to construct on the highway, lines, transformers, etc., made necessary by contracts.

To grant the right to operate, maintain and insure lines, etc., and to collect from customers all monies due on account of electrical service, in accordance with the contracts between the Corporation and the customer.

To guarantee to the Commission the cost of power delivered to or supplied by the Commission, plus the charges in connection with the delivery of the power.

To guarantee interest upon its proportionate parts of the monies expended by the Commission on capital account for the acquisition of properties and rights, and acquisition of and construction of generating plants, transformer stations, transmission lines, distributing stations and other necessary works.

To guarantee an annual sum for its proportionate part of all monies expended by the Commission on capital account, so as to form in thirty years a sinking fund for the retirement of securities issued by the Province of Ontario.

To guarantee to the Commission, interest and sinking fund on a twenty year basis on all capital invested by the Commission in equipment, such as transformers, lightning arresters, fuse boxes, meters or other apparatus.

The amounts payable under this contract shall be paid as the Commission may direct. Bills shall be rendered to the consumers





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by the Commission, on or before the 5th day and paid by the consumer on or before the 15th day of each month. All payments in arrears shall bear interest at the legal rate.

Agreement shall remain in force 30 years from the date of the first delivery of power.





HYDRO-ELECTRIC POWER COMMISSION OF ONTARIOORILLIA SYSTEMMEMORANDUM PREPARED BY THE ENGINEERING DEPARTMENT OF THE  
HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO ON THE LINE  
BETWEEN WADDELL, ORILLIA AND BIG CHUTE, AND BETWEEN  
SEVERN AND ORILLIA SYSTEM

The Tie Line between the Waddell Development and Big Chute through the Orillia System, consists of two sections, viz:-

- (1) From the Waddell Main Transmission Line at Sawkham to Longford Mills, at which point connection is made to the transmission line of the Town of Orillia.
- (2) From the Swift Rapids Development of the Town of Orillia to Big Chute.

The Waddell's Development constructed by the Commission, the Orillia Development at Swift Rapids, owned by the Town of Orillia through an agreement with the Department of Railways & Canals, Federal Government, and the Big Chute Development, originally constructed by the Simcoe Railway & Power Co., and later purchased by the Commission, are all located on the Severn River, the Orillia Development lying between the Commission's plants at Waddell and Big Chute, thus transmission lines tying these systems together located one on either side of the Orillia Development, as described above.

Attached hereto (Exhibit IX a) is a copy of the Chief Engineer's memorandum to the Commission dated January 20, 1916, giving reasons for constructing that portion of the tie line between the Waddell System and the Orillia lines at Longford, as well as an extract from the Minutes of the Commission meeting held January 20, 1916, authorizing the construction of the line.

This line was originally constructed for the purpose of passing power from the Waddell System to the Severn System, as Waddell Development had surplus power available and the Big Chute Plant was loaded to its then capacity. This was accomplished by Waddell delivering a certain amount of power to Orillia and an equivalent amount of power taken from the Orillia Development and transmitted to the Big Chute Plant.

The line between the Orillia Development and Big Chute Plant was originally constructed by the Town of Orillia to connect its Ragged Rapids Plant with the Simcoe Railway & Power Company's Plant at the Big Chute, per Agreement "Simcoe Railway & Power Co." with Orillia. Orillia desired to have this connection for the purpose of obtaining standby power for their local system. When the Simcoe Railway & Power Company's Plant was purchased by the Commission the agreement was continued in force until expiration.





The original agreement between the Sincos Railway & Power Company and Grillia re that portion of line between Grillia Development and Big Chute which was assumed by the Commission when acquiring the properties of the Company, expired December 31, 1915, and was renewed for a period of six months. As per instructions (Exhibit IX b) of the Chief Engineer to Mr. James under date of June 7, 1916, an agreement was prepared covering a transfer of power from Wadell to Big Chute through the Grillia System, also for the purpose of securing standby power and emergency power for all three systems on the basis of the Commission paying a minimum bill of \$2,000 per annum for 250 H.P. at \$8.00 per H.P. per annum. All additional power interchanged to be at the rate of \$5.00 per H.P. per annum. This agreement also covered the purchase by the Commission of the Grillia line between their Plant and Big Chute. For reasons given later, this agreement was not executed until December 30, 1916. This agreement was later found to be unsatisfactory due to parallel operating conditions between the Plants, and a new agreement was executed under date of December 9, 1919, superseding the one dated December 31, 1916. The memorandum of the Chief Engineer to the Commission concerning this matter dated June 6, 1916, is attached hereto (Exhibit IX c) as is an extract from the Commission's Minutes of their meeting held June 6, 1916, authorizing the preparation of same.

In order to facilitate construction of the Trent Valley Canal, Severn River Section, it was found necessary to draw out the Ragged Rapids Plant by a dam at Swift Rapids, consequently the Department of Railways & Canals entered into an agreement with Grillia giving them the Water Power Rights at Swift Rapids with certain other concessions, hence the new development at Swift Rapids in lieu of the abandoned Ragged Rapids Plant. As the change from one plant to the other occurred during the war and as Grillia was carrying a large Munition load it was found necessary to execute an agreement with the Commission to obtain power until Swift Rapids was capable of taking care of the Grillia power requirements. As the Commission did not have sufficient capacity in Big Chute and Wadell to supply the demands of Grillia it was necessary to construct a tie line between Eugenia Development and Collingwood tying Eugenia, Severn, Grillia and Wadell Systems and Generating Plants into one transmission network.

The matter was placed before the Commission in a memorandum dated August 2, 1916, copy attached hereto (Exhibit IX d) and an agreement was accordingly executed with the Town of Grillia covering 2,000 H.P. For approval see copy of an extract from the Commission's Minutes of Meeting held on August 2, 1916, (Exhibit IX d). The Eugenia-Severn Tie Line was constructed in the Fall of 1916.

This agreement was for a short term, was dated August 15, 1916, and superseded previous agreement. It covered the supply of 2,000 H.P. from October 1, 1916, to July 1, 1917, temporary only. The long term agreement covering permanent conditions, was executed December 31, 1916, and was superseded by agreement executed December 9, 1919.





The Commission purchased the Tie Line between Swift Rapids Plant and Big Chute Plant from the Town of Orillia for \$10,000 as per agreement dated December 9, 1919, Clauses 6 (a), (d) and (e), for the following purposes:-

- (1) To pass surplus power of Waddell's System to Severn System.
- (2) To be able to purchase surplus power of Swift Rapids Plant from Orillia. The new Swift Rapids Plant having a capacity of from 2,000 to 2,500 H.P. in excess of Orillia requirements.
- (3) To be a connecting link for supplying emergency power for both Orillia and the Commission, according to the circumstances.

As all power sold by the Severn System to Orillia was on a basis of \$25.00 per H.P. on the short term contract executed August 15, 1916, and as Eugenia power was sold to the Severn System at \$25.00 per H.P. Eugenia kept the revenue and bore all the fixed charges on the Tie Line between Eugenia and Collingwood up to the end of the fiscal year (October 31, 1920), the original cost of this Tie Line being \$92,924.90, as per the Commission's books 1917.

As at the end of 1920 this Eugenia-Severn Tie Line being useful for the purpose of transferring power from one system to the other, and as the sale of power to Orillia was not a factor to be given consideration, it was decided to divide the charges between the two systems on a horsepower basis and at the end of the fiscal year (October 31, 1921) the average horse power sold on the Severn System was 5449.8, and on the Eugenia System 4698.5, and the total charges on the Tie Line for the year were \$9,401.12; consequently the split was made as follows:-

\$3,044.67 to Severn  
\$4,356.45 to Eugenia

Up to the end of 1920 fiscal year (October 31st) all power sold by the Waddell System to the Severn was paid for at the rate of \$25.00 per horse power per annum, Waddell taking the revenue. All fixed charges and operating costs in connection with the line from Newkum to Longford, Waddell System, were taken care of by Waddell, and the fixed charges and operating costs on the Tie Line between Swift Rapids and Big Chute were taken care of by the Severn System. The Commission paid Orillia \$730.00 per annum in accordance with the agreement executed December 9, 1919, for the purpose of using the Orillia System to pass Waddell's power to Severn, this amount being charged against the Severn System. For the fiscal year ending October 31, 1921, power sold by Waddell to Severn was charged for on a cost basis as far as the junction with Orillia line at Longford, the rental paid to Orillia for the privilege of passing power through their system, and the fixed charges on the Swift Rapids Big Chute Tie Line being charged to Severn.





It should be noted that the Big Chute Plant located on the Severn River is capable of taking care of high load factor loads on account of the fairly steady stream flow of the Severn River due to the regulation by the Department of Railways and Canals, and the large storage basin afforded by Lakes Couchiching and Simcoe. It is, therefore, possible to operate the Big Chute Plant at approximately full load capacity, twenty-four hours per day. As the demand on the Big Chute Plant from various municipalities served is very light during the hours from mid-night to 7 o'clock the following morning and also during Sundays and Holidays it is possible during such periods to transfer a large amount of power to the Eugenia System without any additional cost to the Severn System, thereby enabling the Commission to curtail the output of the Eugenia Development and store water in the Eugenia Storage Basin.

The Eugenia Development is essentially a peak load generating plant, the Storage Basin being capable of supplying a large amount of power for short periods and consequently, by working the Eugenia Development in conjunction with the Big Chute Development in the manner outlined above, the maximum efficiency can be obtained from the water available at both locations, hence the advantage of the Tie Line between the two systems.

The Wasdell Development is not loaded at the present time and has surplus power available. The same applies to the Orillia Development; consequently by the Tie Line between the Wasdell and Big Chute Developments on either side of the Orillia System it is possible for the Commission to obtain the surplus power of both of these developments for use on the Severn System at peak load periods and if necessary to arrange for passing power through to the Eugenia System should the Big Chute Plant not be able to supply same.

SUMMARY - CONDITIONS GOVERNING WASDELL,  
ORILLIA, BIG CHUTE, EUGENIA TIE LINE

Big Chute and Wasdell tied into Orillia by two tie lines, one on either side of Orillia Plant. Orillia lies between Wasdell and Big Chute and interchange of power between the two must be passed through Orillia System.

Eugenia tied with Severn by a line between Eugenia Development and Collingwood.

Wasdell's tie line to Orillia constructed in 1916, Chief Engineer's memorandum and Commission's approval January 20, 1916, copies attached. Orillia - Big Chute tie line originally constructed by Orillia, purchased by the Commission per agreement dated December 31, 1916, superseded by agreement dated December 18, 1919. Chief Engineer's memorandum and Commission's approval attached.

Eugenia tie line was constructed in the Fall of 1916 originally to supply 2,000 H.P. to Orillia, per short term agreement dated August 18, 1916. This line was later used as a straight





tie line between systems.

Agreement between Orillia and Simcoe Railway & Power Company covering tie line between Orillia System and Big Chute expired December 31, 1912, was renewed for six (6) months. The agreement dated December 31, 1913, between the Commission and Orillia was intended to cover future conditions, power being sold to the Commission at \$8.00 with minimum bill of \$2,000.00, minimum amount of power 250 H.P. While this agreement was in preparation the manufacture of war munitions and a change from Ragged Rapids to Swift Rapids by Orillia necessitated additional power for short periods, hence temporary nine (9) months agreement with Orillia and the Commission dated August 15, 1916, and which was the means of providing the original tie line between Orillia and Collingwood on the Severn System. This agreement being temporary only, the permanent agreement was executed December 31, 1916, but was found to be unsatisfactory due to parallel operating conditions and was superseded by permanent agreement dated December 9, 1919.

#### ADVANTAGES OF TIE LINE

Wadell's able to pass surplus power to Severn.

Severn able to buy surplus power from Wadell's and Orillia.

Standby service and transfer of emergency power to and from all three developments possible through tie lines.

Off peak power can be transferred Severn to Eugenia as well as Wadell's and Orillia power to Eugenia through Severn System via tie line Collingwood to Eugenia.

Big Chute as well as Orillia and Wadell's are high load factor developments on account of constant stream flow of Severn River. Eugenia is a high load peak load low load factor plant with large storage basin and limited stream flow. Tie lines enable Commission to obtain maximum efficiency from water of Beaver and Severn Rivers.

Energy of Severn River plants at such periods when there is no use for same can be stored in Eugenia Storage basin to be available at peak load periods, by means of passing power over the tie lines.

\* \* \*

#### NOTE -

Attached hereto are Exhibits IX a to IX d both inclusive, referred to in the foregoing:-





HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

RUGERIA SYSTEM

MEMORANDUM RE CONNECTION BETWEEN THE WADDELL'S AND  
ORILLIA-LONGFORD LINES

(This Memorandum referred to in Exhibit IX)

Toronto, January 20, 1918

MEMORANDUM TO SIR ADAM BECK, CHAIRMAN:

Sir:

Referring to conditions on the Severn System, I beg to report that we have at present a load on the Big Chute Plant, without supplying power to Orillia of 2200 h.p. or with Orillia taking approximately 800 h.p., a total of 3000 h.p.

Contracts have been entered into with the C.P.R. at Port Michichal, requiring from 400 to 600 h.p., municipality of Collingwood, 400 h.p., and municipalities of Midland, Penetanguishene and Barrie, 200 to 300 h.p. - - in all a load of over 4000 h.p., on the Severn System, Big Chute development.

In view of the conditions and the urgency of augmenting the supply of power, I would recommend that a connection be made between the Waddell's and Orillia-Longford lines, if some agreement can be arrived at with the municipality of Orillia, for the supplying of power from Waddell's Falls and the Big Chute, as conditions warrant. The cost of such a connection is in the neighborhood of \$15,000.00, to enable both systems to be operated satisfactorily.

I desire your instructions and authority in regard to this matter, and have the honour to be, Sir,

Your obedient servant,

(CHIEF ENGINEER)

\* \* \*

MINUTES OF COMMISSION MEETING

HOLD JANUARY 20, 1918

The Chief Engineer reported on the advisability of a connection being made between Waddell's and Orillia-Longford lines for the supply of power from Waddell's Falls and the Big Chute, which was approved and authorized to be gone on with providing an agreement was completed with the municipality of Orillia upon terms already submitted.





HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

BRILLIA SYSTEM

MEMORANDUM RE AGREEMENT BETWEEN THE MUNICIPALITY OF BRILLIA  
AND THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

(This Memorandum referred to in Exhibit IX)

Toronto, June 7th, 1916.

MEMORANDUM TO MR. JAMES:

I beg to inform you that the Commission has authorized the preparation of an agreement between the Municipality of Brillia and the Commission, for the supplying of power from the Swift Rapids Plant -- the following terms to be incorporated therein:

1. Method of measurement to be standard.
2. The Commission to undertake to pay a minimum bill of \$2000 per annum, during the period of non-completion of the plant at the Big Chute; upon completion of this plant the above guarantee of minimum bill shall terminate, and a new agreement be made between the parties for emergency service or firm power as the case may be.
3. The Commission to pay at the rate of \$8.00 per horsepower per annum for firm horsepower delivered from Swift Rapids Plant during any month, measured as per standard agreement submitted to the municipality.

Emergency power and uncontrollable fluctuations due to the operation of the plants in parallel shall not be considered in such measurement.

This part of the agreement shall receive careful consideration with the object of taking care of all emergency and fluctuation conditions which may result or arise from the parallel operation of all the plants on the Severn.

4. The Commission to undertake to purchase, at present valuation, the lines between Swift Rapids, and Big Chute, and install a second circuit.
5. The Commission and the municipality agree to the joint use of the lines between Big Chute, Swift Rapids, Brillia, Longford and Wadell's for the purpose of interchange of power between Wadell's and Big Chute or Swift Rapids, Big Chute and Wadell's.
6. Measurement of power to be made at the respective generating stations and no charge to be made for the use of the lines of the Commission or the municipality up to the amount equal to 800 or 1000 horsepower.

Refer to the recent communications to and from the municipality of Brillia and place this matter in hand immediately so that the agreement may be ready at the earliest possible date.

Yours truly,

Chief Engineer.



HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SEVERN SYSTEM

NOTES RE VISIT OF MR. HALE, K.C., OF THE ORILLIA COMMISSIONER RE SEVERN.

(This Memorandum referred to is Exhibit IX)

Toronto, June 6th, 1916

TO SIR ADAM BECK, K.B. CHAIRMAN:

Sir:

The Orillia Commission has advised us that it contemplates putting in a third generator and turbine equipment, providing it can secure from the Commission a guarantee of a minimum bill of \$2500. per annum, it being understood that upon such an agreement being entered into, the Commission would have the right to use the lines of the Orillia Commission for the transfer of power from the Wasdell's Falls plant to the Severn System.

The Commission would, under this arrangement, purchase the transmission lines between Swift Rapids and the Big Chute, at the physical valuation, i.e. the cost to the Orillia Commission less depreciation.

Payment to the Orillia Commission to be made only on firm power as taken by the Commission.

I informed Mr. Hale that the matter of the previous discussion had been referred to you for decision and that I was instructed to state that the Commission would be willing to pay on a minimum of 250 h.p. for any month in which the Commission obtained a supply of firm power from Swift Rapids or Wasdell's, the Commission to pay at the rate of \$8.00 per horsepower per annum for such power taken.

Mr. Hale stated that they were very anxious to make the arrangement set forth above, and would prefer the guarantee of a minimum annual payment, rather than a minimum horsepower per month being used from either Wasdell's or Swift Rapids plants.

I have the honour to be, Sir,

Your obedient servant,

Chief Engineer.





MINUTES OF COMMISSION MEETING  
HELD JUNE 6, 1916

Communication from Orillia re power was dealt with and the Chief Engineer and Secretary were authorized to prepare contracts and advise Orillia that contracts were being prepared covering all the matters under consideration and would be submitted as soon as complete.

\* \* \*

Toronto, July 18, 1916

MEMORANDUM OF PHONE CONVERSATION  
WITH MR. C. E. HALE, ORILLIA,  
ONTARIO

Mr. Hale desires to arrange for a meeting to discuss Orillia matters on Thursday, 20th inst. The Municipality has under consideration contract for 1000 H.P. for munitions works. The Municipality desires to know the amount the Commission can deliver from Wasdell's Falls and Big Chute plants during the coming winter. Also it is considering the use of a steam auxiliary during this period.





HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO  
EUGENIA SYSTEM

MEMORANDUM RE ORILLIA AGREEMENT.

(This Memorandum referred to in Exhibit IX)

Toronto, August 2, 1916

(TO SIR ADAM BECK, K.B. CHAIRMAN)

Sir:

IN RE ORILLIA AGREEMENT

I have the honour to inform you that I have received a request from the municipality of Orillia for the supply of at least 2000 h.p. during a period of nine months, from October 1st, 1916, to July 1st, 1917; and to inform you also that the Commission requires additional capacity to supply power in the Severn District.

In view of this fact, I would recommend that the Commission enter into a contract with the municipality of Orillia for the construction of a tie-line between the Eugenia and Wincoe Systems, connecting the Eugenia Station with Collingwood, at an expenditure of approximately \$130,000.00.

The terms of the contract suggested, and accepted by the municipality, by its telegram, in answer to ours of the 31st ultimo; viz.:-

"Attention of Mr. C.H. Hale. In accordance with understanding reached with your representative on Thursday July 27th, the Commission will deliver two thousand horse-power on terms of Commission's standard contract, at rate of twenty-five dollars per horsepower per annum for nine months. Minimum bill for this period to be thirty thousand dollars in monthly instalments whether power taken or not. Power to be delivered at Big Chute and Tisdell's without cost for transmission to Longford. Agreement in preparation. This also confirms understanding reached re use of your transmission lines by Commission until development of Swift Rapids.

(Sgd.)

Hydro-Electric Power Commission,  
F.A. GABY

F. A. Gaby, Chief Engineer, Hydro-Electric Power Commission  
of ONTARIO, TORONTO."





"Telegram thirty-first July received. We will make contract for two thousand horsepower on terms outlined. Thirty thousand dollars to be minimum of total payments for whole period and to be in lieu of seventy-five per cent clause. Our Commission to take no responsibility for capital outlay or maintenance on line to Eugenia and to acquire no rights in it. Power to continue to be supplied after expiry of nine months period as far as practicable, until completion of Swift Rapids plant at twenty-five dollar rate for amount used monthly. We will defer transfer of our transmission lines until line to Eugenia is completed as requested. Whole agreement contingent on understanding that line from Eugenia Collingwood will be begun by Hydro at once, and completed by October first at latest. This arrangement not to prejudice pending contract for sale of power to hydro from our new Swift Rapids plant.

(SGD) ORILLIA WATER LIGHT & POWER COMMISSION

C.H. Hale, Vice-Chairman"

The municipality of Orillia is to enter into an agreement with the Commission on terms and conditions similar to its standard contract for the supply of power, with the exception of the minimum charge of 75% of the maximum demand, in lieu of which the municipality agrees to pay a minimum bill of \$30,000.00 in monthly instalments, for the power taken over a period of nine months, the maximum amount not to exceed 2000 h.p. The municipality also agrees to permit the Commission to use its transmission lines between Longford and Big Chute without cost to the Commission until the tie-line between Eugenia and Collingwood is constructed, work on which is to be started immediately, and estimated date to complete which is October 1st, 1916.

I have the honour to recommend that a contract, as above, be entered into with the municipality of Orillia, and am,

Sirs,

Your obedient servant,

(CHIEF ENGINEER)

\* \* \*

MINUTES OF COMMISSION MEETING  
HELD AUGUST 8, 1916.

Agreement with Town of Orillia was referred to the Chief Engineer and Secretary to complete matters.







